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August 29, 2000

Mr. Dale Hatfield  
Chief, Office of Engineering and Technology  
Federal Communications Commission  
2000 M Street NW, Suite 480  
Washington, DC 20554

Dear Mr. Hatfield:

As required by Part 63.100(a) of the Federal Communications Commission's Rules, AT&T hereby files its Final Service Disruption Report for an AT&T network outage.

**1. DATE / INCIDENT LOCATION TIME:**

July 31, 2000 12:49 PM EDT

**2. GEOGRAPHICAL AREA AFFECTED:**

Columbus, OH

**3. CUSTOMERS AFFECTED (APPROXIMATELY):**

33,401 (based on blocked calls)

**4. TYPES OF SERVICES AFFECTED:**

Intertoll, toll access and toll completing

**5. DURATION OF OUTAGE:**

One Hour

## **6. BLOCKED CALLS:**

100,202

## **7A. CAUSE OF INCIDENT:**

The 1B processor in the Columbus, OH 4ESS detected errors from various peripheral frames, resulting in intermittent switch phases. During this switch phase activity, automatic system recovery re-established a processor sanity configuration, however, 14 peripheral frames duplex failed. It was believed that only one peripheral frame prevented the 1B processor from communicating with the other peripheral frames, resulting in the phase activity and subsequent service degradation.

## **7B. EQUIPMENT NAME / TYPE:**

4ESS

## **7C. PART OF NETWORK:**

Columbus, OH

## **8. RESTORATION METHODS:**

The on-site technical team identified the most suspect peripheral frame and replaced four circuit packs. The frame was intentionally left out-of-service until the packs that were removed, were returned to Lucent Technologies for testing and analysis results. Service was restored to the remaining 13 affected peripheral frames via manual intervention.

## **9. STEPS TO PREVENT REOCCURRENCE:**

AT&T and Lucent Technologies have jointly performed additional analyses of the intermittent hardware problems that affected communications on the peripheral frames, to achieve full automatic system recovery of the 4ESS.


## **10. APPLICABLE BEST PRACTICES:**

AT&T has reviewed the Network Reliability: A Report to the Nation, June 1993 and has evaluated all best practices in SECTION C – SOFTWARE AND SWITCHING SYSTEM RELIABILITY: CAUSE, CURE, OR BOTH? The recommendations below from such report have been identified and incorporated in the steps to prevent switching system outages.

### Section 5.3.3 Hardware Recommendations

- 5.3.1. This communication is crucial, since it is far more likely that a proper determination of root cause will be made by the system supplier and service provider jointly, rather than each one acting independently and with limited knowledge.
- 5.3.4 The system supplier should perform root cause analysis of all outages triggered by a single hardware failure.
- 5.3.5 Additionally, continued effort to improve the hardware reliability itself will minimize the need for activation of the fault recovery software and lead to more reliable operation of the entire system.

Sincerely,

A handwritten signature in black ink, appearing to read "M. DelCarino", with a long horizontal flourish extending to the right.

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This form should be sent for the following timeframes:  
B/C 90,000-149,999 3 days  
B/C 150,000 & greater 120 minutes

AT&T  
Initial Service Disruption Report

FAX TO: FCC WATCH OFFICE, WASHINGTON, DC

202-632-6975 Voice

202-418-2812 FAX

202-418-2813 FAX

ALTERNATE FCC WATCH OFFICER

1. Date/Time of Incident 7-31-2000 1249 EDT
2. Geographic Area Affected Columbus, OHIO
3. Customers Affected (est) 30K+
4. Types of Service Affected Inter-toll, Toll Connect
5. Duration of Outage 1 Hour
6. Blocked Calls (est) 90K+
- 7A. Cause of Incident Under Investigation
- 7B. Equipment Name/Types LESS EQUIPMENT
- 7C. Part of Network Affected Columbus, OHIO
8. Restoration Methods Used N/A
9. Steps to prevent recurrences N/A

AT&amp;T Contact Person:

Mike DelCasino

Telephone Number:

202-457-2023

Date/Time of Report:

MOP 3.01 (for form instructions)

Revised 7/00

FCCform.doc

